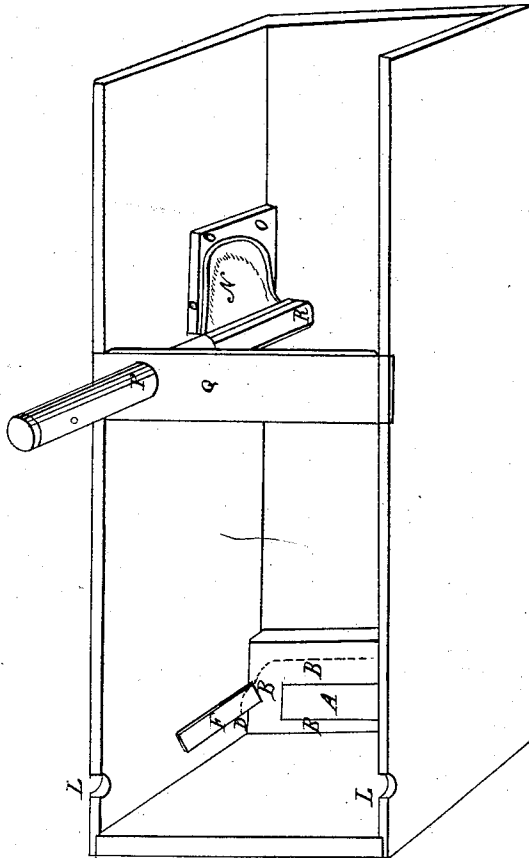
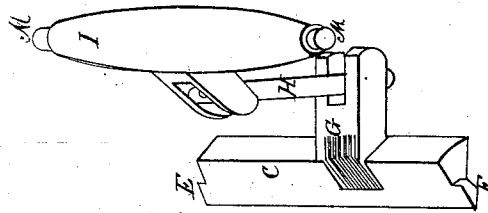


W. Buckminster,

Water Gate,

No 709.

Patented Apr. 25, 1838.



UNITED STATES PATENT OFFICE.

WILLIAM BUCKMINSTER, OF FRAMINGHAM, MASSACHUSETTS.

GATE FOR FLUMES OF WATER-WHEELS.

Specification of Letters Patent No. 709, dated April 25, 1838.

To all whom it may concern:

Be it known that I, WILLIAM BUCKMINSTER, of Framingham, in the county of Middlesex and Commonwealth of Massachusetts, esquire, have invented, constructed, and applied to use on experiment a new and useful improvement in the form of gates for any description of mills driven by water power and a new and improved mode of opening and shutting the same, called the "Trap-Gate," specified in the words following, viz.

This improvement consists as described herein below, viz.

When the water in a common flume is let on to the water wheel through the bottom of the flume I case the orifice or sluice-way, A, made for that purpose, all round with plank two inches wide or more for the gate to rest on when shut—or I cover over the said orifice with a single plank and then cut a hole through said plank large enough for my sluice-way—I call this casing or plank the under-lip B, B, B. The upper side of which lip I line with leather or other pliable substance when perfect tightness is required. The upper lip of the gate G which shuts down on this under-lip is made of a thick plank or timber of sufficient length and breadth to cover this orifice completely over as a common valve covers the orifice of a pump-box. This upper-lip may be of any desired thickness and will open easy in proportion to its thickness. Its upper edges are hewn down and cornered nearly to a sharp edge, leaving it much in the shape of a thick slab sawed from a round log. Across the center of this upper lip is firmly fixed a horizontal arm, E, extending out one foot or more from this lip. To the end of this arm, which extends upstream, a chain or an upright shaft H, is fixed, which chain or shaft is attached to a common windlass, I, or to a lever at the top of the flume.

The gate is opened by turning this windlass or by moving this lever so as to raise the said upright shaft or chain by which the edge of the said upper lip is canted up forty five degrees or more to open a passage for the water between the said under and upper lips sufficient to fill the throat or sluiceway below the floom—while the other

side or back part of said upper lip E, E, remains stationary near the bulk head of the flume. This back side of the upper lip is left longer than its front side, and is so cut as to form a round tenon E, E, or gudgeon at each end, which extends into the sides of the flume, or into cleats F fastened on to said sides to keep this back side of the gate in place while opening and shutting. The under lip and the upper-lip of this gate are both in a horizontal position when shut.

When the water is let on to the wheel through the side of the flume the orifices O, O, O, for that purpose is cased all around as before, or it is covered with a whole plank, and an orifice is then cut through said plank behind N, of any desired dimensions and lined like the first. An upright shaft P is then fixed on one side of this orifice and near the side of the flume. The lower end of this shaft is formed into a round tenon or gudgeon R. Q enters a cleat fixed on the floor of the flume so as to turn with ease. The upper end of this shaft turns on any common hinge fixed at the top of the flume, Q. To this upright shaft is firmly fixed a thick plank N, of sufficient surface, and in such a manner, as to cover over this over orifice completely. Its form is much like that of the upper lip of the first described gate. The side projecting into the flume being oval or slab-like, that it may be more easily opened. A lever inserted in a hole O, near the top of this shaft is moved horizontally and opens the gate to any extent desired, and shuts it. This gate opens into the flume like a door into a room.

I claim as my invention—

The form of the gates as above described and the said mode of opening them, without friction, and without gains to slide in.

In testimony that the above is a true specification of my improvement as above described I have hereto set my hand this first day of February A. D. eighteen hundred and thirty eight.

WM. BUCKMINSTER.

Witnesses:

WM. P. ELLIOT,
EDMUND MAHER.